REMARKS

Claim 1 has been amended and claims 1, 2, 11-16 and 28-31 are pending and under consideration. Claim 1 is the independent claim. No new matter is presented in this Amendment.

REJECTIONS UNDER 35 U.S.C. §102:

Claims 1, 2 and 11-12 are rejected under 35 U.S.C. §102(b) as being anticipated by Tominaga et al. (U.S. Patent 5,252,370).

Applicants respectfully traverse this rejection for at least the following reasons.

Regarding the rejection of independent claim 1, it is noted that claim 1 recites a multi-layer structure comprising: a substrate; a transformation layer comprising a metal oxide layer formed on the substrate, wherein a volume of a portion of the transformation layer irradiated by a laser beam spot expands when a temperature of the portion exceeds a predetermined temperature; and a pit pattern formed on an outmost surface of the multi-layer structure, the pit pattern having a diameter smaller than a diameter of the laser beam spot.

Initially, it is noted that Tominaga discloses directing a recording laser light onto an optical recording medium 1, from the back surface of the substrate 2, in order to heat the recording thin film 3. The inorganic compound in recording thin film 3 is heated and thus decomposed generating a gas. The pressure of the evolving gas causes a space 31 to be created within the recording film 3. In unison with a temperature rise in recording thin film 3, the temperature of substrate 2 in proximity to recoding thin film 3 is also increased so that substrate 2 becomes softened. This allows the pressure of the evolving gas to dig a recess 21 in the substrate 2 surface. As the case may be, dielectric thin film 4 can also be depressed by the gas pressure (column 6, lines 40-58). Accordingly, Tominaga discloses heating a recording film 3 so as to allow the pressure of the evolving gas to dig a recess 21 in the surface of the substrate. This is done with the purpose of causing a change in optical parameters of portions where recording laser light is irradiated such as optical constants and light path length, resulting in a lower reflectivity (column 3, lines 6-11).

Accordingly, Tominaga discloses a structure in which a recess is formed on the substrate itself. Contrary to Tominaga, independent claim 1 recites that the pit pattern is formed on an

outmost surface of the multi-layer structure, and that the pit pattern has a diameter smaller than a diameter of the laser beam spot.

In other words, claim 1 not only defines the location of the pit pattern but also discloses the size of the pit pattern.

Tominaga on the other hand makes no reference or suggestion to the size of the recess and furthermore states that the recess is formed on the substrate and not on an outmost surface of the multi-layer structure as recited in the independent claim.

Accordingly, Applicants respectfully assert that the rejection of claim 1 under 35 U.S.C. § 102(b) should be withdrawn because Tominaga fails to teach or suggest each feature of independent claim 1.

Furthermore, Applicants respectfully assert that the rejection of dependent claims 2, 11, 12 and 65 under 35 U.S.C. § 102(b) should be withdrawn at least because of their dependence from claim 1 and the reasons set forth above, and because the dependent claims include additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claims 2, 11, 12 and 65 also distinguish over the prior art.

REJECTIONS UNDER 35 U.S.C. §103:

Claims 13, 16 and 28-31 are rejected under 35 U.S.C. §103(a) as being unpatentable over Tominago et al. (U.S. Patent 5,252,370) as applied to claims 1 and 37 above in view of Esho et al. (U.S. Patent 4,504,548).

Regarding the rejection of claims 13, 16 and 28-31, it is noted that these claims depend from independent claim 1. As noted above, Tominaga fails to teach or suggest the novel feature of independent claim 1.

Esho discloses an optical recoding medium which permits information to be written and read by a laser light (column 1, lines 6-10). Esho does not teach or suggest anything about a volume of a portion of the transformation layer irradiated by a laser beam spot expanding when a temperature of the portion exceeds a predetermined temperature; or a pit pattern formed on an outmost surface of the multi-layer structure, the pit pattern having a diameter smaller than a diameter of the laser beam spot.

Accordingly, Esho fails to cure the deficiencies of Tominaga and thus fails to teach or suggest the features recited in independent claim 1 from which claims 13, 16 and 28-31 depend.

Therefore, Applicants respectfully assert that the rejection of claims 13, 16 and 28-31

under 35 U.S.C. §103(a) should be withdrawn because neither Tominaga nor Esho, whether taken singly or combined, teach or suggest each feature of independent claim 1 from which claims 13, 16 and 28-31 depend.

Regarding the rejection of claims 45 and 49-51, it is noted that these claims have been cancelled without prejudice or disclaimer. Accordingly, the rejection of these claims is moot.

ALLOWABLE SUBJECT MATTER:

Claims 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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